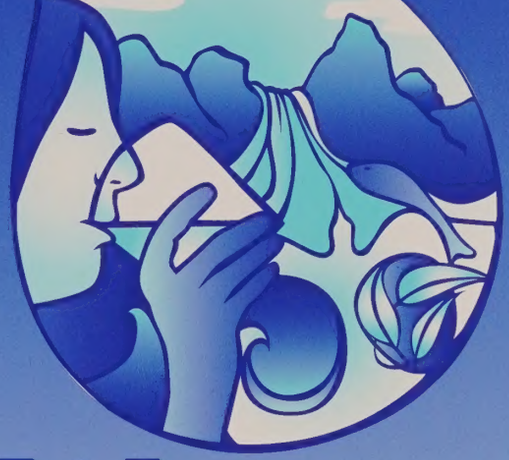


# Water

*Source for Life*

Canada

## Water: Source for Life

*Identifier Descriptive*

Water is one of the most common and most important substances on the earth's surface. In many First Nations cultures, water symbolizes the primal substance from which all forms come and to which they will return. Water is symbolic of power and considered to be the blood of life.

This concept begins with a basic drop of water to reflect water's primal origin. Within the drop, one sees numerous life forms that rely on water sources to survive. In fact, many of these life forms have high levels of water within their bodies.

In the forefront one finds an individual drinking water from a glass. This reflects our basic need for the resource.

The background shows the powerful flow of water down the mountains through Mother Earth. Subtle elements of spirituality (i.e. bird) and life (i.e. plants, fish in water) have also been integrated into the concept.

The clouds help illustrate the cycle of life for water as it evaporates from Mother Earth to exist in the sky in another form.

The concept uses cool colours of blue to bring out sensations of clarity, purity and freshness.

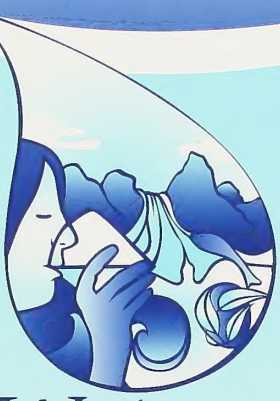
**Water truly is a Source of Life.**

**www.ainc-inac.gc.ca/H2O**

# Safe Drinking Water

## *for Healthy First Nation Communities*





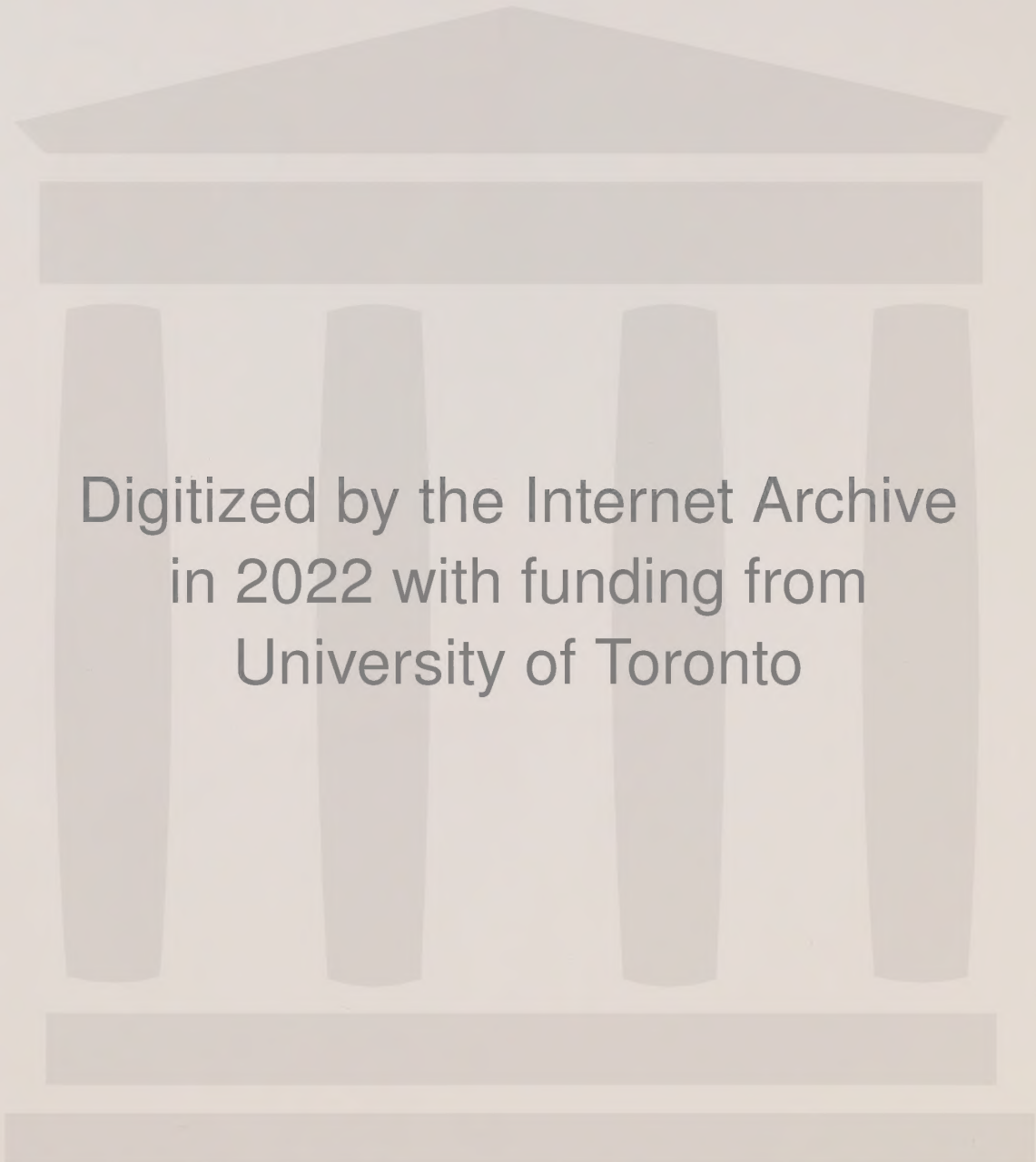
The Government of Canada and First Nations are working together to make sure the drinking water in your community is clean, safe and reliable.

## Water *Source for Life*

Learn more about what we're doing to improve drinking water and wastewater management on reserves. Visit Indian and Northern Affairs Canada's *Water: Source for Life* Website at **www.ainc-inac.gc.ca/H2O** or call **1-800-567-9604**.

Canada

QS-6201-003-EE-A1



Water
*Source for Life*

**First Nations Water Management Strategy**
**Water and Wastewater Services on First Nation Reserves**

## ROLES AND RESPONSIBILITIES OF CHIEF AND COUNCIL

☐ **Operation and maintenance**: Ensure the effective operation and maintenance (O&M) of water and wastewater facilities that comply with the terms and conditions of the funding agreements. For example, implementing maintenance management plans, ensuring that funding for O&M is used for its intended purpose, assuming partial financial responsibility for operating and maintaining water and wastewater facilities through user fees and/or other revenues, etc.

- **Regular facility inspections and system performance monitoring**: Follow set monitoring and inspection systems to protect the life cycle of new and existing water and wastewater assets on reserves and ensure the safety of the community residents.
- **Emergency response plan**: Ensure that all water and wastewater facilities have an emergency response plan updated and available for use. Emergency response plans are necessary in case of emergencies that may threaten the health and safety of the system users.
- **Operator training and certification**: Help deliver training to First Nation water and wastewater plant operators. Ensure that an annual training and certification plan, including the Circuit Rider Training Program, is put in place. Ensure that all operators are certified, or work directly under a certified operator, by the year 2006.

☐ **Capital projects**: Ensure compliance with the terms and conditions of the funding agreements under the Capital Facilities and Maintenance Program.

☐ **Reporting and record keeping**: Ensure that proper records for the construction, operation and maintenance of water and wastewater facilities are kept up-to-date.

☐ **Drinking water quality monitoring**: Working with Health Canada, ensure that programs for monitoring drinking water quality are in place, as per the *Guidelines for Canadian Drinking Water Quality*.

☐ **Boil water advisories/orders**: In the event of unsatisfactory results from drinking water quality sampling and testing, recommendations such as boil water advisories are communicated immediately by the Environmental Health Officer to the Chief and Council, who are then responsible for taking the necessary actions to protect residents and to correct any deficiencies.



QS-6201-001-EE-A1



Canada

Water
*Source for Life*



# First Nations Water Management Strategy
# Water and Wastewater Services on First Nation Reserves

## ROLES AND RESPONSIBILITIES



JANUARY 2004

QS-6201-001-EE-A1

www.ainc-inac.gc.ca/H2O

Canada

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# First Nations Water Management Strategy
# Water and Wastewater Services on First Nation Reserves

## Roles and Responsibilities

---

## 1.0 Introduction

Drinking water is an important health and safety issue in First Nation communities. The need to maintain a safe, sustainable water supply is paramount. The lessons learned from the tragic events at Walkerton, Ontario and North Battleford, Saskatchewan, show the serious consequences that can occur if drinking water supplies and wastewater systems are not managed competently and effectively. The management responsibility of water supplies from source to tap in First Nation communities is shared between First Nations and the federal government. Everyone has a stake in ensuring the safe and wise use of water and wastewater disposal. First Nation leaders and key federal departments, as well as community members, must have a clear understanding of their roles and responsibilities in providing clean, safe and reliable drinking water, and wastewater treatment.

This document describes the roles and responsibilities of First Nations, Indian and Northern Affairs Canada (INAC), Health Canada, and Environment Canada, in providing safe and reliable drinking water and effective wastewater services in First Nation communities according to the First Nations Water Management Strategy. Key initiatives of the strategy and their impact on water and wastewater management are discussed. Please find a copy of the seven-part strategy in **Appendix A**.

## 2.0 Background

Water and wastewater services in First Nation communities are provided through various arrangements, including:

- community systems (servicing five or more homes);
- municipal-type agreements;
- individual private systems; and
- trucked services.

Across Canada, there are about 740 community water treatment systems and 462 community wastewater treatment systems on reserves. These systems were evaluated by INAC during a 2002-2003 on-site assessment. The assessments were based on criteria related to performance, operating practices, operator qualifications, defined quality objectives and identified areas of improvement, and required costs. The assessment results showed that 75% of water systems and 70% of wastewater systems posed a potential medium to high risk to drinking water quality and wastewater effluent quality. Detailed findings of the assessment can be found in the report called *National Assessment of Water and Wastewater Systems in First Nations Communities – Summary Report* (May 2003), which is available on INAC's website at: **www.ainc-inac.gc.ca/H2O**

Health Canada also assessed the delivery of their Drinking Water Safety Program and found that the frequency of drinking water quality monitoring did not meet the *Guidelines for Canadian Drinking Water Quality*, Sixth Edition. The assessment showed that monitoring of bacteriological contaminants in distribution systems only met, on average, 29% of the frequency for bacteriological parameters recommended in the guidelines.

## 3.0 First Nations Water Management Strategy

As a result of INAC's and Health Canada's assessments and the need to ensure the safety and well-being of First Nation community residents, the Government of Canada initiated the First Nations Water Management Strategy. Under the strategy, $600 million in new funding has been allocated to improve water and wastewater services on reserves. It will be implemented over a 5-year period beginning in 2003. The resources will help ensure that all high-risk and some of the medium-risk water and wastewater facilities in First Nation communities are brought up to standard, maintained, operated, and monitored accordingly.

The First Nations Water Management Strategy was developed jointly between INAC and Health Canada. It addresses crucial elements of sound water quality management using a multi-barrier approach. The multi-barrier approach is an integrated system of procedures, processes and tools that collectively check and lessen the risk of contamination in drinking water from the water source, the treatment plant and the distribution system. The strategy, to be undertaken in partnership with First Nations and other stakeholders, focuses on improving water quality on reserves through initiatives such as:

- establishing national standards and protocols;
- upgrading infrastructure to applicable standards;
- effectively operating and maintaining water and wastewater systems;
- enhancing training and certification of operators;
- launching a public awareness campaign;
- a stronger, transparent inspection, reporting and compliance regime; and
- monitoring drinking water quality as per the *Guidelines for Canadian Drinking Water Quality.*

## 4.0 Roles and Responsibilities

The management of potable drinking water and wastewater on First Nation reserves, from source to tap, is a shared responsibility between First Nations and the federal government. Programs and services for providing clean, safe and secure water on reserves are provided through First Nation band councils, INAC, and Health Canada, including an advisory role to INAC by Environment Canada.

To ensure high-quality water and effective wastewater treatment in First Nation communities, all stakeholders must have a clearly defined role and set of responsibilities. The roles and responsibilities of the primary stakeholders are outlined in the following sections.

### 4.1 Indian and Northern Affairs Canada

INAC provides funding and advice to First Nations to help provide water and wastewater services to on-reserve communities. Subject to the approval and availability of funds, funding is provided to First Nations for capital construction and upgrading, operation and maintenance, and water and wastewater plant operator training and certification under the Capital Facilities and Maintenance Program. Funding is provided with the goals of:

- maximizing the life cycle of the facilities;
- lessening health and safety risks;
- ensuring facilities meet applicable codes and standards; and
- ensuring facilities are managed in a cost-effective and efficient manner.

INAC enters into financial arrangements with approved recipients according to terms and conditions of the Capital Facilities and Maintenance Program and/or other INAC requirements. Funding is available subject to a review of the First Nation's financial management track record to ensure sufficient capacity exists to successfully operate and manage its capital and operation and maintenance program.

Funding is available for water and wastewater systems that service five or more connections. For water systems, components include:

- community wells;
- treatment plants;
- pumping stations;
- intakes;
- piping and related parts;
- hydrants;
- house-service connections;
- trucked water;
- storage reservoirs; and
- appurtenances.

Components of wastewater systems include:

- lift stations;
- sewer piping force mains;
- outfalls;
- house-service connections;
- septic tanks and tile fields;
- storage tanks;
- low pressure and grinder systems;
- small bore sewer;
- truck-haul systems (includes tankage and pressurization); and
- various types of mechanical and natural treatment facilities.

INAC also provides funds for municipal-type agreements when they are a cost-effective and practical solution.

Subject to the terms in the Memorandum of Understanding (April 1, 1987) between INAC and Public Works and Government Services Canada and following regional and headquarters annual specific-services agreements, the Client Service Team for INAC will provide knowledgeable client support and advice on water and wastewater systems to INAC.

### 4.1.1 Capital Projects

Construction and upgrades for capital projects of water and wastewater systems are managed according to the Long-Term Capital Plan. Policies and related level of service standards for infrastructure services are established to provide direction on the level of service INAC is prepared to fund while ensuring on-reserve residents have access to basic infrastructure services at a level comparable to services other Canadians receive in communities of a similar size and circumstance.

INAC's Level of Service Standards require that a complete analysis be made of the life-cycle cost (normally for a 20-year period) of all practical options that satisfy basic health, safety and environmental concerns. System designs must satisfy all these requirements and be cost-effective in order to be funded by INAC. Also, new or upgraded water and wastewater systems in First Nation communities must be designed and built to meet federal guidelines and/or provincial/territorial standards, where these are more strict. Proposed capital projects must also comply with all other relevant federal/provincial/territorial environmental statutes, such as the *Canadian Environmental Assessment Act*, *Canadian Environmental Protection Act*, *1999*, the *Fisheries Act*, etc., as applicable.

Criteria for funding support available to First Nations for capital water and wastewater projects is defined as per INAC's directive, *Corporate Manuals System – Capital Facilities and Maintenance – Water and Sewage Systems*. The directive is available on INAC's website at **www.ainc-inac.gc.ca/H2O**. INAC has authority to approve capital projects up to $15 million. Projects exceeding $15 million require approval by the Treasury Board of Canada.

INAC monitors and assesses a First Nation's financial and project delivery performance of all capital projects according to the terms and conditions of the funding agreement under the Capital Facilities and Maintenance Program. Water and wastewater project designs are reviewed jointly by INAC, Public Works and Government Services Canada, Health Canada, and Environment Canada. INAC ensures compliance on all capital projects by performing design and planning reviews and conducting regular inspections during construction and commissioning. All reports generated from these activities will be used to systematically update INAC's water database, as required. These database submissions will enable an ongoing evaluation to identify priority construction/upgrade projects.

### 4.1.2 Operation and Maintenance

Operation and Maintenance (O&M) funding for water and wastewater systems must be managed, according to the Long-Term Capital Plan, to preserve the functional integrity of the systems and ensure the safe O&M of the systems for community residents and the environment. O&M base unit costs (formula) have been developed based on standard O&M cost elements such as labour, fuel, electricity, equipment and material. Criteria for funding available to First Nations for O&M is defined as per INAC's directive*, Corporate Manuals System – Capital Facilities and Maintenance – Operation and Maintenance*. A copy is available on INAC's website at: **www.ainc-inac.gc.ca/H2O** .

INAC regions verify O&M compliance by reviewing financial performance results and ensuring the established monitoring, reporting and inspection regime is followed. INAC regions update INAC's water databases using ongoing annual inspection reports, provided by First Nations. After receiving the reports, INAC regions will help First Nations implement work plans to correct problems, physical and/or operational, including the need for operator training and certification. Also, a thorough facility inspection will be done under the Asset Condition Reporting System, as part of the O&M program. Every three years, water and wastewater facilities will undergo an extensive inspection for the physical and operational performance of the systems as well as an evaluation of the operator's training and/or certification needs. These inspections can be done by qualified third-party personnel such as consultants, circuit riders, the Client Service Team for INAC, or tribal council engineers.

INAC is available to advise or help with water and wastewater services and the handling of related emergency situations. For example, in situations where a Boil Water Order or Boil Water Advisory has been issued, INAC may help a First Nation by:

- providing bottled water or another source of water until the problem is fixed;
- getting involved as part of an emergency team that may include a number of First Nation technical advisors or consulting firms; or
- providing temporary emergency funding for replacing faulty equipment, etc.

## 4.2 First Nations

As stated in Section 4.1, First Nations are responsible for ensuring that water and wastewater systems are planned, designed, constructed, and maintained and operated according to funding agreement conditions. First Nations need to comply with all program and financial terms and conditions in their funding agreements. First Nations must also provide full and complete disclosure of all information, data and reports as agreed upon in their funding agreement. The Chief and band council are accountable to members of the First Nation community as well as to INAC for water and wastewater program delivery using funding provided by the Capital Facilities and Maintenance Program.

### 4.2.1 Capital Projects

All proposed capital projects for water and wastewater systems, funded by INAC, must comply with the terms and conditions of the funding agreement under the Capital Facilities and Maintenance Program. For all INAC-funded capital projects, First Nations are responsible for:

- project identification;
- feasibility (engineering) studies;
- environmental assessments;
- project design;
- project construction;
- plant classification; and
- commissioning.

First Nations are required to:

- follow INAC's tendering policy;
- conduct regular site inspections;
- provide construction and financial progress reports;
- submit a project completion report;
- secure "as built" drawings for future reference; and
- develop site-specific maintenance management plans.

First Nations require INAC approvals for all capital project components from the feasibility stage to the commissioning stage as per INAC policy.

### 4.2.2 Operation and Maintenance

As part of their funding arrangement, First Nations must effectively manage the O&M of water and wastewater facilities. In particular, facilities must be maintained to preserve them in as near to their original or renovated condition as is practical. They must be operated daily in a way that ensures the health and safety of the community and the environment. To ensure O&M requirements are addressed, First Nations need to:

- use current maintenance management plans;
- conduct regular facility inspections;
- follow an established reporting regime;
- impose user fees for service;
- establish and have available emergency response procedures and protocols;
- provide ongoing operator training and certification; and
- establish an accountability regime demonstrating appropriate spending of O&M funds.

These requirements are highlighted in the following bullets.

- Maintenance management plans

With the help of INAC regions, First Nations must establish and implement a maintenance management plan (MMP) for each water and wastewater treatment system on reserve. MMPs must be reviewed and updated regularly according to the terms and conditions of the funding agreements. The MMP provides a more effectively managed O&M program by identifying tasks and their associated frequencies required for key maintenance activities. Some of the key elements of a MMP include:

- preparing an asset inventory;
- identifying maintenance activities and tasks and their associated frequencies;
- developing a work schedule;
- preparing work orders; and
- determining a budget.

An MMP checklist is provided in **Appendix B**.

- Regular facility inspections and monitoring regimes

To protect the life cycle of new and existing water and wastewater assets on reserves and to ensure the safety of community residents, First Nations must follow INAC's and Health Canada's monitoring and inspection regimes. All sampling and testing procedures performed during monitoring activities will be carried out as defined in the monitoring and inspection regime, including the use of accredited laboratories. Annual facility inspections will be done as outlined in the INAC policy in addition to a three-year Asset Condition Reporting System facility inspection, performed by qualified personnel. The submission of a report, following the facility inspection, is required. The report has to include a brief summary describing the facility, operation of the facility, a summary of monitoring data and compliance with applicable standards. Reports generated from these inspections will help effectively track the performance of a system and help with early detection of problems.

First Nations are required to address unsatisfactory asset conditions identified in their annual facility inspections and/or Asset Condition Reporting System reports. If a First Nation does not use corrective measures, and depending on the level of risk to health, gradual compliance assurance will be started by INAC. This will include things such as:

- written warnings;
- holdbacks from "non-essential" funding; and
- ultimately, third-party management.

As an option, INAC will consider working closely with recognized First Nations technical corporations. Any critical health risk resulting from inadequate O&M will continue to be addressed on an emergency basis.

- User fees

INAC provides a funding subsidy to First Nations for the O&M of water and wastewater facilities on reserves. First Nations Chief and Council are responsible for assuming partial financial responsibility for the remaining funding through user fees and/or other revenue sources.

- Emergency response plan

First Nations are responsible for ensuring that all water and wastewater facilities have an emergency response plan updated and available for use. INAC, Health Canada, and Environment Canada will provide guidance and advice in developing the emergency response plan. Emergency response plans are necessary in case of emergencies which can have the potential of threatening the health and safety of the community or the environment.

Emergency response plans should contain, but not be limited to:

- a list of persons to contact in an emergency;
- all potential emergency situations; and
- a communication plan.

For more information about preparing an emergency response plan, refer to **Appendix C**.

- Operator training and certification

First Nations, in collaboration with INAC, will continue to facilitate the delivery of training to First Nation water and wastewater plant operators. First Nations are responsible for providing an annual training and certification plan, including the Circuit Rider Training Program, to be submitted to INAC regional offices and included in a progress report. The goal is to have all operators certified, or directly supervised by a certified operator, by 2006.

The certification of a plant operators requires that the persons be certified to a level equivalent to the class of facility (Class I, II, III, IV) for which they are responsible. Certification is based on current provincial standards. Training may be delivered in a number of ways such as by First Nation organizations, tribal councils, individuals, private consulting firms, community colleges, or provincial organizations. The Circuit Rider Training Program, provincial colleges and institutes will continue to be used to upgrade the skills of operators and provide help in writing operator-certification exams. Additional training resources provided by INAC depend on progress reports received from the regions. If a First Nation does not comply with the training policy, a certified person will be hired by INAC. The First Nation will receive less O&M funding to recover the costs of hiring a certified person.

- Operation and maintenance funds accountability

Funding for O&M must be used for the purposes described in the funding agreements. First Nations are responsible for demonstrating appropriate spending of O&M funds for their intended purpose.

## 4.3 Health Canada

Health Canada, in collaboration with INAC, helps First Nation communities south of 60° ensure safe drinking water on their lands. As part of the Environmental Health Program and through the Drinking Water Safety Program, Health Canada works in partnership with First Nations to monitor drinking water quality in distribution systems with five or more connections and cisterns in First Nation communities. Water quality sampling, testing and interpretations are done according to the *Guidelines for Canadian Drinking Water Quality,* Sixth Edition. Health Canada, in collaboration with the Federal-Provincial-Territorial Committee on Drinking Water, publishes the *Guidelines for Canadian Drinking Water Quality*. They are used as the basis for provincial and territorial guidelines, objectives and regulations.

Health Canada facilitates sampling and testing through support and training of community-based drinking water monitors. Through these monitors, Health Canada ensures that water monitoring programs are in place in First Nation communities. Environmental Health Officers (EHOs) review, interpret and disseminate sampling results for drinking water quality to First Nation communities and, depending on the results, to other stakeholders such as INAC. EHOs do quality assurance and quality control of the samples taken by the community-based drinking water monitor. EHOs, with the consent of Chief and Council, also sample and test drinking water quality in communities where monitors are absent and/or not in place.

Interpretations of water sampling results and recommendations by EHOs employed by Health Canada or First Nations stakeholders are immediately communicated to the First Nation, and other appropriate stakeholders, if the sampling results are unsatisfactory. If an immediate threat to the health and safety of the community is identified, the First Nation is responsible to take necessary action to protect its residents—a Boil Water Order or Boil Water Advisory may be issued. A Boil Water Order or Boil Water Advisory is issued when the quality and/or safety of drinking water from the distribution system can no longer be guaranteed or when unacceptable bacteriological quality of drinking water is identified.

Boil Water Orders are issued and rescinded (lifted) by Medical Officers of Health with designated authority under the appropriate provincial public health act. Boil Water Advisories are recommended by the EHO to the Chief and Council, and are issued and rescinded by the Chief and Council. The Chief and Council are responsible for communicating the Boil Water Order and/or the Boil Water Advisory to the community, among others, and for ensuring that all residents are aware of the order or advisory. More information on issuing and rescinding these orders or advisories can be found on Health Canada's Water Quality and Health website at: **www.hc-sc.gc.ca/waterquality**

Health Canada helps First Nations with follow-up sampling and investigation to help identify the problem and to provide recommendations to fix the problem.

## 4.4 Environment Canada

With respect to wastewater management, Environment Canada provides advice and technical expertise to INAC on assessments under the *Canadian Environmental Assessment Act*, and on requirements related to the *Canadian Environmental Protection Act*, *1999*, and the *Fisheries Act*. Environment Canada develops standards, guidelines and/or protocols for wastewater systems on federal and Aboriginal lands, including effluent limits.

Environment Canada is also developing a long-term strategy for wastewater effluents. This strategy will influence the standards and protocols to which wastewater systems would need to adhere. The long-term strategy will address requirements under the *Canadian Environmental Protection Act*, *1999* and the *Fisheries Act* through a comprehensive federal/provincial/territorial process aimed at developing a harmonized approach to wastewater management across Canada. As part of the long-term strategy, Environment Canada will develop a *Fisheries Act* regulation that will apply to municipal as well as federal wastewater systems.

INAC policy states that on-reserve wastewater treatment systems are to be designed and operated in such a way that effluent quality meets the requirements of the latest edition of the *Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments,* established by Environment Canada, and other applicable provincial/territorial requirements, if these are more strict.

## 5.0 Public Awareness and Community Involvement

Through a collaborative approach between INAC, Health Canada, Environment Canada and First Nation leaders, water quality and water conservation information should be provided to community residents to raise their awareness of the importance of water quality issues. Valuable, accessible resources and tools will be provided to First Nation residents to enable them to make informed decisions on a range of water quality issues within their communities. In particular, some of the key messages to be communicated to First Nation residents include:

- **Importance of having safe drinking water**

  The belief that clear natural waters, either from lakes and rivers or wells, do not require treatment before drinking is a myth. First Nation residents must be made aware of the importance of only drinking water that has been properly treated. Source water, either from groundwater or surface water, requires treatment to make the water safe and aesthetically pleasing for consumption. The level of treatment depends on source water quality and treatment objectives. As a minimum, all drinking water should be disinfected to ensure the safety of the water whether it is treated by municipal or smaller water treatment systems.

  Safe drinking water is vital to human health. First Nation residents must have the information necessary to adopt safe practices in their communities and Chief and Council are accountable for providing safe drinking water in their communities.

- **Drinking water should be monitored as per the *Guidelines for Canadian Drinking Water Quality***

  The guidelines are recognized throughout Canada as the standard of drinking water quality. They are nationally recognized, reliable guidelines against which drinking water quality can be measured, so problems can be quickly identified and corrected.

  To ensure that the guidelines are based on the most recent scientific data, the Federal-Provincial-Territorial Committee on Drinking Water revises the guidelines once a year. Health Canada publishes updates as required.

- **Role of the plant operator is critical in providing safe and acceptable drinking water and effective wastewater services**

  The role of plant operators in providing safe and acceptable drinking water and effective wastewater treatment is key—community recognition of their important work is necessary. Plant operators must receive community support for the crucial work they provide to their communities. They should be paid adequately for their services. Water and wastewater facilities must also be adequately staffed with qualified personnel who meet training and certification requirements. Water and wastewater plant operators must receive adequate training (i.e., mandatory certification to a level according to their plant classification) and be advised of support available to them.

- **Wastewater should be properly disposed of**

  Providing safe drinking water is highly dependent on source water quality. Great efforts must be made to ensure that source waters do not become polluted. All sewage and grey water should be considered contaminated with disease-producing organisms or chemicals of varying toxicity. Improper disposal of sewage and grey water can contaminate sources from which drinking water is taken. Contaminated source waters also threaten the environment and place added stress on water treatment processes. It is important, therefore, to communicate the message of responsible wastewater treatment and disposal. Information about proper construction, operation and maintenance of community wastewater treatment systems and individual treatment systems, such as septic systems, should be made available to community members.

- **First Nation community members should participate in local source water protection and water conservation initiatives**

  First Nation community members have an active role in decision-making processes for watershed protection and well-head protection management. Through an integrated approach involving various stakeholders such as federal and provincial agencies, municipalities and local community-based watershed groups, First Nations should be involved in the planning and implementation of issues of common interest that affect their water sources. First Nations should also have information that will increase and expand their knowledge of water conservation activities so they can use water more wisely and responsibly.

**APPENDIX A**

## FIRST NATIONS WATER MANAGEMENT STRATEGY

Indian and Northern Affairs Canada (INAC), Health Canada, and Environment Canada, in collaboration with First Nations, are committed to ensuring the provision of safe, clean and reliable drinking water from source to tap within First Nation communities. To ensure the safety of water supplies in First Nation communities, $600 million in new funding will be administered through the First Nations Water Management Strategy to improve water and wastewater services on reserves, over a 5-year period beginning in 2003. The strategy is part of a larger $1.6 billion investment program. The strategy was developed jointly between INAC and Health Canada in consultation with First Nations. The implementation of the strategy involves a collaborative approach between INAC, Health Canada, Environment Canada, First Nations and other partners. It will address crucial elements of sound water quality management using a multi-barrier approach.

The strategy consists of seven parts:

1. A plan to upgrade and build water and wastewater facilities to meet established design, construction and water quality standards with a priority on identified facilities;

2. An effective water quality monitoring program combined with a comprehensive and coordinated compliance and reporting regime that will improve the detection of drinking water problems in a timely manner, thereby reducing the possibility of risk to health;

3. An effective and sustainable operation and maintenance program designed to ensure safety of the residents and the protection of the assets with a priority on identified high-risk facilities;

4. A plan for the continued expansion and enhancement of training programs, to ensure that all operators have the skills, knowledge and experience required to fulfill their responsibilities, supported by the introduction of mandatory certification requirements for all operators;

5. A set of integrated water quality management protocols with clearly defined roles and responsibilities consistent with national performance standards along with improvement in emergency response procedures;

6. A public awareness campaign aimed at informing both First Nation decision-makers of their roles and responsibilities in ensuring the safety of water supplies within their communities and First Nation households of measures they can take to protect the quality of water within their home and community; and

7. A comprehensive set of clearly defined standards, protocols and policies, using a multi-barrier approach.

**APPENDIX B**

## Maintenance Management Plan Checklist

1. Are the roles, responsibilities, and reporting relationships of maintenance and management staff clearly defined?

2. Is there a process for authorizing maintenance work, including both routine and emergency maintenance activities?

3. Are maintenance activities planned and scheduled?

4. Is there an organized system for developing a yearly budget for operating and maintening physical assets? Is the budget linked with the maintenance management plan?

5. Is someone responsible for ensuring that maintenance is being done properly (e.g., maintenance inspections)?

6. Are there regular inspections of assets and facilities (e.g., water quality, wastewater effluent)?

7. Are maintenance funds used only for maintenance activities?

8. Are maintenance work records, equipment manuals, and warranties kept up-to-date in a reasonable way?

9. Are “as-built” drawings readily available?

10. Do operators have enough training or qualifications to operate community water systems?

11. If First Nation employees do not have the abilities, are contractors and specialists used to do the work?

12. Are Capital Assets Inventory System records kept and updated every year by the First Nation?

APPENDIX C

# A GUIDE TO DEVELOPING AN EMERGENCY RESPONSE PLAN FOR WATER SYSTEMS IN FIRST NATION COMMUNITIES

Prepared by Public Works and Government Services Canada
Client Services Team (previously Real Property Services)
for Indian and Northern Affairs Canada

## INTRODUCTION

All water system operators and owners must now have an emergency response plan. This is needed in case of an emergency which might threaten the health of people using water from the system.

This guide will help First Nations administrators and water system operators develop their own emergency response plan. An emergency response plan will help you protect your water system users in an emergency.

This document includes:

- information about why an emergency response plan is needed;
- examples of the most common types of emergencies and how to respond to those emergencies; and
- guidelines for developing a list of people and agencies that you may need to contact in an emergency.

Although this guide is designed for smaller facilities, it is also a useful review document for operators of larger waterworks systems that already have emergency response plans.

In developing this guide, reference has been made to British Columbia Water and Wastewater Association (BCWWA) materials that are its intellectual property according to Canadian copyright law. Permission has been received from the BCWWA to use its materials. BCWWA accepts no responsibility for damages, if any, arising from the information in this guide.

We would like to acknowledge the work done by the British Columbia Motels, Campgrounds, Resorts Association; the BCWWA Small Water Systems Committee; and the British Columbia Government which also provided a template for this document.

If you have any questions about your water system or setting up your emergency response plan, contact your local Environmental Health Officer or your regional representative at Indian and Northern Affairs Canada.

## WHY DO YOU NEED AN EMERGENCY RESPONSE PLAN?

You need an emergency response plan to ensure the safety of everyone using water from your system, in case of any kind of emergency. Your ability to respond quicky and correctly in an emergency will help prevent unnecessary problems, and help protect your consumers. A plan may also save you money by preventing other problems.

## ACTION – NOT REACTION

When an emergency happens, you should start to fix it right away. A properly prepared and well-organized emergency response plan will tell you exactly what to do and whom to call. This will help you respond quickly and effectively, avoiding any disruption or contamination of your water system.

To develop your special emergency response plan, proceed as follows:

1. Identify the different kinds of problems that could affect water quality or quantity in your system.
2. Determine specific solutions to each of those problems before they happen. Planning for an emergency may help prevent one. By evaluating all of the potential problems in your system, you may find steps you can take now that will prevent an emergency from happening later. You should identify all problems that need boil water advisories, requests for help, advice about using other sources, and other possible concerns before they happen. When the emergency happens, you don't want to waste time deciding whom to call and what to tell people.

In the section called **Examples of Potential Emergency Situations and Possible Responses**, there are several examples of when an emergency response plan is needed and the appropriate types of actions to take. The list is not complete. This guide should be used only as a guideline for outlining your own community-specific emergency response plan.

## WHAT SHOULD YOUR EMERGENCY RESPONSE PLAN INCLUDE?

### 1. LIST OF CONTACTS

Your emergency response plan should include a list of all people and agencies that should be contacted in case of any emergency. The list should include your system's owners and operators, repair services, alternative water suppliers, media representatives, government agencies, and the people who use water from your system.

Having a list of all the people and agencies you will need to contact, and the order in which you should contact them in case of an emergency, will save you time when time is really important. It will also be a checklist to ensure you have contacted everyone you should contact. Also, it will help remind you of local resources that may be able to help you respond to an emergency if necessary.

## 2. LIST OF POTENTIAL EMERGENCY SITUATIONS

When preparing your emergency response plan, identify all potential emergency situations that could either make the water unsafe, prevent the flow of water, or pose a health risk. Some of the potential categories to identify include:

- contamination of source (e.g., leakage of gas or other hazardous material into water course);
- loss of source;
- flood conditions;
- mudslides above intake;
- chlorinator failure;
- broken water main;
- pump failure;
- power failure;
- backflow or back siphonage;
- chlorine gas leaks;
- spills of disinfected water into fish-bearing streams;
- earthquake; and
- fire (forest fire in watershed or fire at the water treatment plant).

If you operate a small water system, you only need to list the actions that you must take right away to deal with the emergency situation. Longer-term solutions or activities to correct the situation can always be developed—with the help of local experts—after these initial activities, depending on the specifics of the emergency.

## 3. COMMUNICATIONS PLAN

A good communications plan is the key part of your emergency response plan. It plays a key role in how you respond in an emergency. First, you must be able to alert all your system users as soon as possible, especially if there is any possible risk to their health from drinking the water you provide.

Your communications plan depends, more than anything else, on the customers your system serves. Usually, small water systems serve one of the three following types:

- small- to medium-sized communities, from 15 to 300 connections, mostly homes, schools, and commercial businesses;
- very small communities, from 2 to 14 connections, usually homes, nursing stations, band offices, etc.; and
- single commercial establishments that provide drinking water to non-resident (transient) populations, such as day-care centres, gas stations, trailer parks, and restaurants.

## HOW DO YOU GET THE MESSAGE OUT TO THE COMMUNITY?

### A. Public notices

A simple flyer is a good way of ensuring that every household in the community knows about the drinking water situation. It is important to make sure everyone gets the message that there is an emergency and that the water is not safe to drink. Some suggestions for the flyer include:

- using bright-coloured paper to ensure that it is visible, especially for the youth and older community members (always use the same colour paper for a water issue);
- using a large font to ensure that the message can be read by everybody; and
- posting or taping the flyer to the house.
  Don't put it in a mailbox or through the mail slot because it could be missed.

### B. Phone trees

In a small- or medium-sized community, your communications plan may include organizing a "phone tree." This is a pre-arranged plan that allows every household in the community to be contacted with an important message by their neighbours, by telephone. People who are phoned have the names of other people to phone, who have the names of other people to phone, and so on until everyone on the tree has been alerted.

Many small communities already have some kind of "phone tree" system in place so they can respond quickly to other emergencies, such as alerting local volunteer firefighters. Talk to your local fire chief—you may be able to use the same system for an emergency involving your water system.

For very small water systems where there are only one or two or a dozen connections, all close together, a "phone tree" probably isn't needed. In these cases, if you are already at the scene, you can pass the word around just by knocking on a few doors and getting others to pass the word around too so that all users know about the problem right away.

If you are using a "phone tree" to tell your community members not to drink the water or to boil it before they drink it, make sure that people who either do not have phones or who are not in when the call is made also get the message.

### C. Media

Local media—radio, television, and newspaper—can also warn community members if the situation is serious enough. Contact local media as part of your emergency planning

to set your credibility with them. This will ensure that if you ever do call, they'll know who you are and how important it is to co-operate with you in alerting their audience.

### D. Signs

If you own an operation that makes drinking water available to the public (e.g., a tap at a gas station that trailers or campers use to fill up their water tanks, or a communal tap where people get their drinking water), hang a sign on the tap telling people that the water may be contaminated or unfit to drink. Include this in your emergency plan.

## 4. SYSTEM INFORMATION

In your emergency response, include a plan or map of the system that shows the locations of:

- water mains;
- critical control points (e.g., intakes, pump house(s), shut-off valves, connections between alternate sources, pressure zones, etc.);
- access routes, roads or trails to these critical control points;
- the emergency contact list;
- tools and maintenance equipment;
- high water-use industries; and
- high-risk facilities such as schools, day-care centres, hospitals and long-term care facilities.

## 5. EQUIPMENT OPERATIONS

Standard operating procedures for switching to other power supplies and/or maintaining generators, including diagrams of electrical systems in pump houses, may also be part of your emergency response plan. They should be beside the equipment to which they refer.

## EXAMPLES OF POTENTIAL EMERGENCY SITUATIONS AND POSSIBLE RESPONSES

### CONTAMINATION OF SOURCE—SPILLS, VEHICLE ACCIDENT

| ACTIONS: | CONTACTS: |
|---|---|
| · Shut down pump or intake.<br>· Tell the Environmental Health Officer at Health Canada.<br>· Tell the Chief and Council.<br>· Contact the Provincial Emergency Preparedness Program.<br>· Tell all users.<br>· Contact government agencies for advice and help.<br>· Contact local media for public service announcement (where all customers can not be notified by phone).<br>· Arrange another source (e.g., bottled water, bulk hauler, storage tank, etc.).<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local health practitioners (e.g., community health representatives, including the health director and nurse)<br>· Tribal council representative<br>· Provincial Emergency Preparedness Program<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer) |

### LOSS OF SOURCE

| ACTIONS: | CONTACTS: |
|---|---|
| · Ensure pump is shut off.<br>· Tell the Chief and Council.<br>· Tell all users.<br>· Contact government agencies for advice and help.<br>· Arrange another source (e.g., bottled water, bulk hauler, storage tank, etc.).<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local health practitioners (e.g., community health representatives such as the health director and nurse)<br>· Tribal council representative<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer)<br>· Provincial Ministry of Environment |

## FLOOD CONDITIONS

| ACTIONS: | CONTACTS: |
|---|---|
| · Tell the Chief and Council.<br>· Contact the Provincial Emergency Preparedness Program.<br>· Tell all users about the potential for water contamination, loss of pump, power, etc. Users should be told to store some drinking water in advance, and to boil any suspect water to a "rolling boil" (about two minutes) or disinfect with chlorine when flood conditions exist.<br>· Contact government agencies for advice and help.<br>· Contact local media for public service announcement (where all customers can not be notified by phone).<br>· Arrange another source (e.g., bottled water, bulk hauler, storage tank, etc.).<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local health practitioners (community health representatives such as the health director and nurse)<br>· Tribal council representative<br>· Provincial Emergency Preparedness Program<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer)<br>. Environmental Health Officer |

## BROKEN WATER MAIN

| ACTIONS: | CONTACTS: |
|---|---|
| · Reduce pressure (but keep enough pressure to prevent backflow).<br>· Call for repairs (e.g., plumber, excavator).<br>· Tell the Chief and Council.<br>· Tell all users about service interruption.<br>· Tell the local public health agency.<br>· Arrange another source (e.g., bottled water, bulk hauler, storage tank, etc.).<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local public health agency<br>· Environmental Health Officer |

## CHLORINATOR FAILURE

| ACTIONS: | CONTACTS: |
|---|---|
| · Tell the local public health agency.<br>· Tell the Chief and Council.<br>· Tell all users to boil suspect water to a "rolling boil" (about two minutes) or use other disinfection procedures according to recommendations of local health officials.<br>· Arrange chlorinator repairs.<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local public health agency<br>· Environmental Health Officer<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer)<br>· Chlorinator manufacturer and other technical advisors (tribal council representative) |

## PUMP FAILURE

| ACTIONS: | CONTACTS: |
|---|---|
| · Tell the Chief and Council.<br>· Tell all users of service interruption.<br>· Call for pump manufacture repairs.<br>· Tell the local public health agency (if interruption is not short-term).<br>· Arrange another source (e.g., bottled water, bulk hauler, storage tank, etc.).<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local public health agency<br>· Environmental Health Officer<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer)<br>· Pump manufacturer and other technical advisors (tribal council representative) |

## POWER FAILURE

| ACTIONS: | CONTACTS: |
|---|---|
| · Tell the Chief and Council.<br>· Call Hydro provider.<br>· Start back-up generator.<br>· Tell all users of service interruption if back-up is not able to maintain supply.<br>· Tell the local public health agency.<br>· Arrange another source (e.g., bottled water, bulk hauler, storage tank, etc.).<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local public health agency<br>· Environmental Health Officer<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer) |

## BACKFLOW OR BACK SIPHONAGE

| ACTIONS: | CONTACTS: |
|---|---|
| · Tell the local public health agency.<br>· Tell the Chief and Council.<br>· Tell all users to boil suspect water to a "rolling boil" (about two minutes) or use other disinfection procedures according to recommendations of local health officials.<br>· Clean and disinfect lines as directed, after corrections have been made. | · Local public health agency<br>· Environmental Health Officer<br>· Indian and Northern Affairs Canada (Capital Management Officer and/or Funding Services Officer) |

## CHECKLIST FOR EMERGENCY RESPONSE PLAN PREPARATION

### • EMERGENCY PHONE CONTACT LIST

- Personnel ❑
- Government agencies ❑
- Repair services ❑
- Tribal council ❑

### • EMERGENCY PROCEDURES

Response plan for each possible emergency situations:

- Contamination of source ❑
- Loss of source ❑
- Flood conditions ❑
- Mudslides above intake ❑
- Chlorinator failure ❑
- Broken water main ❑
- Pump failure ❑
- Power failure ❑
- Backflow or back siphonage ❑
- Chlorine gas leaks ❑
- Spills of disinfected water into fish-bearing streams ❑
- Earthquake ❑
- Fire (forest fire in watershed or fire at the water treatment plant) ❑

### • MAP OF SYSTEM SHOWING

- Water mains ❑
- Critical control points ❑
- Intake(s) ❑
- Shut-off valves ❑
- Access routes to critical control points ❑
- Pump house ❑
- Emergency plan, tools and maintenance equipment ❑
- High-risk facilities (schools, day-care centres, hospitals, etc.) ❑

### • ELECTRICAL DIAGRAMS

- Generators ❑
- Disinfection equipment and room ❑

- GENERAL PROCEDURES

| | |
|---|---|
| · Generator start-up | ❑ |
| · Power source change over | ❑ |
| · Disinfection operation | ❑ |
| · Disinfection procedures for wells and distribution system | ❑ |
| · Work Place Hazard Information System | ❑ |
| · Occupational Safety and Health Procedures | ❑ |

# EMERGENCY RESPONSE PLAN – CONTACT LIST

## PERSONNEL CONTACT

| | PHONE | FAX |
|---|---|---|
| *Operator's name* | | |
| *Staff name* | | |
| *Staff name* | | |
| *Staff name* | | |
| *Staff name* | | |

## GOVERNMENT AGENCIES/REPAIR SERVICES/MEDIA

| | PHONE | FAX |
|---|---|---|
| Health Canada (Medical Services Branch) | | |
| Health Services (First Nations) | | |
| Environment Canada | | |
| Police | | |
| Ambulance/Rescue | | |
| Fire Department | | |
| Emergency Preparedness Program | | |
| Emergency Operations Centre (First Nation) | | |
| Emergency Social Services (Provincial) | | |
| Public Works (First Nation Engineering Department) | | |
| Indian and Northern Affairs Canada, Regional Office | | |
| Radio Station | | |
| Newspaper | | |
| Television Station | | |
| Department of Fisheries | | |
| Spill Report Centre (Provincial) | | |
| Natural Resources (Provincial) | | |
| Department of Highways (Provincial) | | |
| Energy/Power/Hydro (Provincial) | | |
| Pump Manufacturer | | |
| Chlorinator Manufacturer | | |
| Excavation Services | | |
| Plumbing Services | | |
| Bulk Water Hauler | | |
| Bottled Water Suppliers | | |

## EMERGENCY RESPONSE PLAN – ACTION LIST

| TYPE OF EMERGENCY | |
|---|---|
| ACTIONS: | CONTACTS: |
| . | . |

# Water
*Source for Life*

***Working together to improve the quality of drinking water in First Nation communities***

Canada

## Manageme

## *Clean, safe water – a shared responsibility*

- Chief and Council

- Indian and Northern Affairs Canada

- Health Canada

  identify problems and to communicate them

- Community members and businesses can also

## *For more information*

# L'eau
## Source de vie

***Travailler ensemble à améliorer la qualité de l'eau potable dans les collectivités des Premières nations***

Canada

L'accès à une eau potable saine, salubre et sécuritaire constitue un besoin essentiel pour la santé et le bien-être des gens des Premières nations. C'est aussi un élément essentiel dans l'édification de leurs collectivités.

Afin d'aider les Premières nations à régler les problèmes reliés à la qualité de l'eau dans leurs collectivités, le gouvernement du Canada a mis sur pied la Stratégie de gestion de l'eau des Premières nations, qui vise à assurer à leurs collectivités l'approvisionnement en eau saine, salubre et sécuritaire, de la source au robinet, et à leur fournir des services efficaces de traitement des eaux usées. Le gouvernement investira 600 millions de dollars sur cinq ans afin de mettre en œuvre cette stratégie.

### S'appuyer sur les mesures déjà mises en œuvre

La stratégie s'inscrit dans un programme d'investissements plus étendu du gouvernement se chiffrant à 1,6 milliard de dollars, qui a permis de réaliser les objectifs suivants :

- l'apport d'améliorations en matière d'infrastructure, de fonctionnement, d'entretien et de formation;
- la mise en place de programmes communautaires pour assurer la surveillance de la qualité de l'eau potable;
- l'évaluation des installations d'eau et d'égout des Premières nations.

L'évaluation a permis de repérer un certain nombre de systèmes à risque élevé ou moyen, susceptibles d'avoir une incidence négative sur la qualité de l'eau.

## *La Stratégie de gestion de l'eau des Premières nations*

**Assurer une eau potable plus saine et plus salubre, et une meilleure qualité de vie par les moyens suivants :**

- **prise de mesures immédiates pour les systèmes présentant des risques élevés et moyens;**
- **rénovations des installations d'eau et d'égout ou construction de nouvelles;**
- **meilleures pratiques de gestion, prévoyant notamment des plans de gestion de l'entretien et l'engagement de dépenses appropriées pour le fonctionnement et l'entretien, afin d'assurer le fonctionnement et l'entretien efficaces et viables des installations d'eau et d'égout;**
- **mise en œuvre d'une meilleure surveillance de la qualité de l'eau, associée à l'instauration d'un régime complet et coordonné de vérification de la conformité et de production de rapports;**
- **engagement de préposés aux installations formés et certifiés, l'objectif étant que tous les préposés soient certifiés d'ici 2006;**
- **l'élaboration d'un ensemble de normes et de protocoles clairement définis pour la vérification et la surveillance de la qualité de l'eau potable.**

## *L'approvisionnement en eau saine et salubre – une responsabilité partagée*

Le gouvernement du Canada, les dirigeants des Premières nations, les membres des collectivités et les entreprises ont tous un rôle important à jouer pour assurer la sécurité de l'eau – de la protection de sa source à son traitement, et à sa distribution au consommateur (en un mot, de la source au robinet).

- **Le chef et le conseil** jouent un rôle clé lorsqu'il s'agit de veiller à ce que les systèmes d'eau et d'égout soient conçus, construits, entretenus et exploités de façon sécuritaire et efficace, conformément aux normes provinciales ou fédérales.

- **Affaires indiennes et du Nord Canada** fournit une aide financière et des conseils pour la promotion des services d'eau. Cela inclut des conseils et du financement pour la conception, la construction, le fonctionnement et l'entretien des systèmes d'eau et d'égout des réserves, et pour la formation du personnel nécessaire, tels les préposés aux stations de traitement.

- **Santé Canada** fournit des services de secrétariat au Comité fédéral-provincial-territorial sur l'eau potable, publie les *Recommandations pour la qualité de l'eau potable au Canada* du comité et travaille en collaboration avec les Premières nations à faire en sorte que des programmes de surveillance de la qualité de l'eau potable soient en place dans leurs collectivités. Ces programmes permettront de détecter rapidement les problèmes et de les communiquer au chef et au conseil pour qu'ils prennent les mesures qui s'imposent.

- **Les membres des collectivités et les entreprises** peuvent prendre un certain nombre de mesures afin d'assurer une eau potable sécuritaire et de réduire la pollution des sources d'eau, notamment : en évitant de déverser des matières industrielles et de nettoyage dangereuses dans les renvois d'eau et les égouts pluviaux, en maintenant des systèmes appropriés d'élimination des eaux usées et en veillant à ce que les moteurs des embarcations soient exempts de toute fuite de pétrole ou d'essence.

## *Notre collaboration peut faire toute la différence*

**L'existence d'une eau saine et sécuritaire constitue un facteur essentiel de la vie. C'est la base sur laquelle reposent les collectivités saines et dynamiques.**

**Le gouvernement du Canada reconnaît cela et est résolu à travailler avec les Premières nations à améliorer la qualité du traitement de l'eau et des eaux usées dans leurs collectivités. En collaborant, nous pouvons permettre l'accès à une eau potable saine, salubre et sécuritaire, et assurer une meilleure qualité de vie aux générations actuelle et futures.**

## *Pour plus de renseignements*

**On peut obtenir de l'information générale et technique sur la salubrité de l'approvisionnement en eau potable et sur le traitement adéquat des eaux usées dans le site Internet *www.ainc-inac.gc.ca/H2O*,**

**ou en envoyant un courriel à l'adresse *InfoPubs@ainc-inac.gc.ca*.**

**Vous pouvez aussi composer sans frais les numéros suivants :**
**1 800 567-9604**
**1 866 553-0554 (ATME).**

## L'eau, source de vie

### *Description du logo*

L'eau est l'une des substances les plus communes et les plus importantes sur terre. De nombreuses Premières nations voient l'eau comme la substance primaire à partir de laquelle toute forme de vie est créée et dans laquelle elle retournera. L'eau est symbole de puissance et de vie.

Essentiellement, ce logo représente une simple goutte qui reflète l'origine primaire de l'eau. On y voit de nombreuses formes de vie dont la survie dépend des sources d'eau. En fait, bon nombre de ces formes de vie sont composées d'une grande quantité d'eau.

Au premier plan, on trouve une personne buvant un verre d'eau _ une image qui reflète parfaitement notre besoin essentiel en eau.

À l'arrière-plan, un puissant cours d'eau longe des montagnes de la Terre mère. Ce logo intègre également des éléments très simples de spiritualité (p. ex., un oiseau) et de vie (p. ex., des plantes, des poissons).

Les nuages illustrent le cycle de vie de l'eau, qui s'évapore de la Terre mère pour prendre une autre forme dans le ciel.

Le logo revêt des bleus froids faisant ressortir des sensations de clarté, de pureté et de fraîcheur.

**L'eau est vraiment une source de vie.**

**www.ainc-inac.gc.ca/H2O**

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# L'eau

*Source de vie*

Canada